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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,865	04/02/2004	Toshikazu Oshidari	023971-0392	9859

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EXAMINER

MULLINS, BURTON S

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/815,865

Applicant(s)

OSHIDARI ET AL.

Examiner

Burton S. Mullins

Art Unit

2834

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
- 1. ☒ Certified copies of the priority documents have been received.
  - 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 02 April 2004 has been considered by the examiner.

### ***Drawings***

3. Figures 11A&B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
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### ***Specification***

4. The disclosure is objected to because of the following informalities: On p.6, line 3, "Ravigneawx" is not understood.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 1 and 10, recitation "...inner and outer rotors are rotated independently within and around the stator..." is indefinite because it is not clear if this means the inner and outer rotors are rotated *independently of each other* or *independently of the stator* or both. In claim 1, recitation "at least one ring plate...intimately put between adjacent two of the flat magnetic steel plates" is vague and indefinite. Does "intimately put" mean that the ring plate is simply between adjacent plates, or that it is in direct contact with both plates? Similarly, "intimately and closely contacting to one another" and "fastening members...to tightly and intimately connect the magnetic steel plates..." in claim 10 are vague and indefinite. Clarification of the meaning of the adverb "intimately" in these various contexts is required. Further, in claims 1 and 10, recitation "...the ring plate being of an endless annular member" is vague because it is not clear how an "annular member" can be defined as "endless".

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-2 and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano (US 6,114,784) in view of Muramatsu et al. (JP 11-346446). Nakano teaches a stator

Art Unit: 2834

for use in a two rotor single stator type electric motor in which inner and outer rotors 10/30 are rotated independently within and around the stator 20 upon application of current to the stator, the stator comprising: a stator core including a plurality of stator teeth that are circumferentially arranged around a common axis, each stator tooth including a plurality of flat magnetic steel plates 21 that are aligned along the common axis (Figs.2&7) while intimately and closely contacting to one another (c.2, lines 36-39).

Nakano does not teach “at least one connecting ring plate coaxially installed in the stator core in such a manner that the ring plate is intimately put between adjacent two of the flat magnetic steel plates of each stator tooth, the ring plate being of an endless annular member.”

Muramatsu teaches a stator core assembly comprising a plurality of teeth laminations 80 intimately connected by ring plates 81 (Fig. 1, abstract). The ring plates eliminate leakage flux.

It would have been obvious to modify Nakano and provide at least one connecting ring plate per Muramatsu since this would have eliminated leakage flux.

Regarding claim 2, as seen in Muramatsu Fig.3, the ring plate 81 comprises an annular inner portion and a plurality of finger portions extending radially outward therefrom.

Regarding claim 5, Muramatsu's plates 81 are nonmagnetic (abstract).

Regarding claims 6-8, Muramatsu's teeth each comprise a generally rectangular cross section (Fig.2) and have a taper (Fig.9) and an auxiliary member G between the teeth (Fig.4).

8. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano (US 6,114,784) in view of Herron (US 3,671,787). As described above, Nakano substantially teaches applicant's invention but does not teach “at least one connecting ring plate coaxially installed in the stator core in such a manner that the ring plate is intimately put between adjacent

Art Unit: 2834

two of the flat magnetic steel plates of each stator tooth, the ring plate being of an endless annular member.”

Herron teaches a laminated stator including nonmagnetic connecting ring plates 12 in intimate contact with adjacent flat magnetic steel plates 11 (Figs.1-2). The nonmagnetic ring plates 12 provide structural support to the machine housing (abstract; c.1, lines 55-57).

It would have been obvious to modify Nakano and provide connecting ring plates per Herron since this would have been desirable to structurally support the motor.

9. Claims 1, 4 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano (US 6,114,784) in view of Itoh et al. (US 6,225,725). As described above, Nakano substantially teaches applicant's invention but does not teach “at least one connecting ring plate coaxially installed in the stator core in such a manner that the ring plate is intimately put between adjacent two of the flat magnetic steel plates of each stator tooth, the ring plate being of an endless annular member.”

Itoh teaches a stator core construction comprising plural laminations 34 with connecting ring plates comprising iron core blanks 50 of magnetic steel (c.6, lines 20-25) in intimate contact with the laminations 34 (Figs.10-11). The iron core blanks provides improved manufacturing (c.5, lines 5-13).

It would have been obvious to modify Nakano and provide connecting ring plates per Itoh to improve manufacture.

Regarding claims 8-9, note Itoh's teeth 34 with auxiliary stator member at the radially leading end thereof (Fig.8b) and non-magnetic, connecting metal (brass) member 38 between adjacent teeth for reducing displacement (c.6, lines 10-18).

Art Unit: 2834

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano (US 6,114,784) in view of Muramatsu et al. (JP 11-346446) and Kurosawa et al. (US 6,043,583). Nakano teaches a stator for use in a two rotor single stator type electric motor in which inner and outer rotors 10/30 are rotated independently within and around the stator 20 upon application of current to the stator, the stator comprising: a stator core including a plurality of stator teeth that are circumferentially arranged around a common axis, each stator tooth including a plurality of flat magnetic steel plates 21 that are aligned along the common axis (Figs.2&7) while intimately and closely contacting to one another (c.2, lines 36-39). Nakano further teaches plural coils 15 around the stator teeth and two support brackets 44/45 between which the stator teeth are sandwiched with fastening members (bolts) 43 (Fig.2).

Nakano does not teach: 1) "at least one connecting ring plate coaxially installed in the stator core in such a manner that the ring plate is intimately put between adjacent two of the flat magnetic steel plates of each stator tooth, the ring plate being of an endless annular member"; or 2) "a molded plastic that embeds therein the stator, the connecting ring plate, the coils, the two supporting brackets and the fastening members thereby to constitute a cylindrical structure".

Regarding (1), Muramatsu teaches a stator core assembly comprising a plurality of teeth laminations 80 intimately connected by ring plates 81 (Fig.1, abstract). The ring plates eliminate leakage-flux.

Regarding (2), Kurosawa teaches a laminate stator core comprising stacked sheet members 1 and a molding comprising a synthetic resin layer which surrounds the stator core structure (Figs.1&2). The resin mold keeps the lamination sheets in contact with each other and maintains their accuracy and durability (c.2, lines 20-26).

It would have been obvious to modify Nakano and provide at least one connecting ring plate per Muramatsu since this would have eliminated leakage flux; and further more to mold plastic and embed the stator/ringplate/coil/bracket/fastener structure of Nakano/Muramatsu per Kurosawa since molding would have been desirable to keep the lamination sheets in contact and improve accuracy and durability.

### *Conclusion*

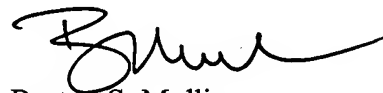
12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Redzic teaches a two rotor, single stator type electric motor/generator including inner and outer rotors 20/32 and stator 40 and stator separators 41 between adjacent stator portions (Fig. 1).

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 2834

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Burton S. Mullins  
Primary Examiner  
Art Unit 2834

bsm  
15 March 2005